EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Derek Lightner on June 28, 2011.

The application has been amended as follows:

Claim 1 (Currently Amended): A method of forming a planar lipid-bilayer membrane for membrane protein analysis, the method comprising:

(a) filling a microchannel with a first buffer solution, the microchannel being disposed under a horizontal partition wall having [[an]] a tapered aperture, such that the tapered aperture narrows from the lower side to the upper side;

(b) applying a small amount of a lipid solution as a droplet to the aperture filled with the buffer solution to form a thin layer of the lipid solution in a chamber, the chamber being formed at a position corresponding to the aperture of the partition wall and being provided with a liquid trap on the partition wall inside the chamber, wherein the liquid trap is a trench formed at the periphery of the aperture that thins the lipid solution added above the aperture; and

(c) applying a second buffer solution as a droplet to the chamber from the upper side of the chamber, thereby forming a planar lipid-bilayer membrane,

wherein the first buffer solution and the second buffer solution are the same or different, and

wherein the lipid solution comprises unarranged phospholipids, each of which having a hydrophilic group and a hydrophobic group, and which form the planar lipid bilayer upon the applying of the second buffer solution in (c).

Claim 9 (Currently Amended): A device for forming a planar lipid-bilayer membrane for membrane protein analysis, the device comprising:

(a) a substrate;

(b) a partition wall disposed over the substrate so as to be parallel to the substrate;

(c) a microchannel defined by the substrate and the partition wall;

(d) a chamber provided with an aperture formed in the partition wall and a liquid trap, which is a trench formed at the periphery of the aperture that thins [[a]] the lipid solution added above the aperture; and

(e) a microinjection device for applying droplets of a lipid solution and a buffer solution to the chamber from the upper side of the chamber,

wherein the aperture is tapered, such that the diameter of the aperture narrows from the lower side toward the upper side.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SUZANNE ZISKA whose telephone number is (571)272-8997. The examiner can normally be reached on Monday through Friday 9 AM to 5 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Blanchard can be reached on (571) 272-0827. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov.

Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/SUZANNE ZISKA/
Examiner, Art Unit 1619

/David J Blanchard/
Supervisory Patent Examiner, Art Unit 1619